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09/823,793	03/30/2001	Sanghoon Lee	Lee 1-17	7445

7590

08/29/2003

Law Offices of Jean-Marc Zimmerman  
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EXAMINER

BRIER, JEFFERY A

ART UNIT

PAPER NUMBER

2672

DATE MAILED: 08/29/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/823,793

Applicant(s)

LEE ET AL.

Examiner

Jeffery A. Brier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 20-25, 31-34, 36, 38 and 40-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-25, 31-34, 36, 38, 40 and 41-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. The amendment filed on 07/17/03 has been entered. Claims 20, 33, 34, and 40 were amended and claims 41-44 were added by this amendment.

***Response to Arguments***

2. Applicant's arguments filed 07/17/03 have been fully considered but they are not persuasive.

On pages 10 and 11 applicant addresses the rejection of claim 20. Applicants position is the Lee article only teaches one FEC algorithm while the claim now claims a first FEC algorithm and a second FEC algorithm. However, the Lee article does teach two FEC algorithms one for the foveated area and one for the non foveated area. See page 140 second column line 23-26 and section 3.3. On pages 11 and 12 applicant addresses the rejection of claim 40. Applicants position is the Lee article does not teach first and second error ARQ allowable error thresholds. However Lee teaches this in section 3.1 since unequal delay is unequal error thresholds. Thus, applicants' argument and amendment to the claims do not overcome the rejection of claims 20, 23, 24, 31, 33, 34, 36, 39, and 40 based upon the first Lee article.

On page 12 applicant addresses the rejection of claims 20 and 40 by the second Lee article. Applicants position is the second Lee article does not teach first and second error ARQ allowable error thresholds. However, Lee teaches this in section 3 since unequal delay is unequal error thresholds. On page 13 applicant addresses the

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rejection of claim 25. Applicants position is the Lee article does not describe low and high processing steps as related to correcting errors. However, Lee teaches this in section 3 since unequal delay allows for unequal error correction. Thus, applicants' argument and amendment to the claims do not overcome the rejection of claims 20-25, 31-34, 36, 38, and 40 based upon the second Lee article.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 20, 23, 24, 31, 33, 34, 36, 39, 40, 43, and 44 are rejected under 35 U.S.C. 102(a) as being anticipated by the IEEE article by Sanghoon Lee, Chris Podilchuk, Vidhya Krishnan and Alan C. Bovik et al. titled Unequal Error Protection for Foveation-Based Error Resilience over Mobile Networks, 2000, IEEE, vol. 2, pgs. 140-143. The two inventors of this application are common to the authors of the article, however, since the article has four authors, this article meets the "by others" of 102(a).

Claim 20:

This article describes a method for partitioning a video image between a foveated area and a background area in section 2. at pages 140-141. The article describes defining a foveation point in the video image and a foveated area in proximity to said foveation point in the abstract on page 140. Also described is extracting a first plurality

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of data signals from said video image representing the foveated area and extracting a second plurality of data signals from said video image representing a background area at page 140 second column second full paragraph lines 6-8. Encoding the extracted first plurality of data signals with a first error correction protocol to create a first encoded signal and encoding the extracted second plurality of data signals with a second error correction protocol different from the first error correction protocol to create a second encoded signal is described at page 140 second column second full paragraph lines 11-21. The Lee article does teach newly added claim limitations of two FEC algorithms, one for the foveated area and one for the non foveated area. See page 140 second column line 23-26 and section 3.3.

Claim 23:

This claim is described by the article at page 141 first column in the first full paragraph and in figure 4.

Claim 24:

This article does not explicitly describe packetizing the first encoded signal with inserted synchronization markers occurring after a first predetermined number of bits; and packetizing the second encoded signal with the inserted synchronization markers occurring after a second predetermined number of bits wherein the first number is smaller than the second number, however, this is inherent since packets have synchronization markers and since different error correction protocols are being used with different levels of error correction the location of the synchronization markers in the different bit streams would be different.

Claim 31

This article describes wherein the first plurality of data signals comprises all pixel signals included in a high-resolution area of said video image at page 140 second full paragraph lines 9-11.

Claim 33:

The article describes the first error correction protocol comprises at least one of FEC (forward error correction) algorithms, ARQ (automatic repeat request) algorithms or error resiliency conforming to video communications industry standards H263++ and/or MPEG-4 at page 140 second column second full paragraph.

Claim 34:

The article describes the second error correction protocol comprises at least one of FEC (forward error correction) algorithms or error resiliency conforming to video communications industry standards H263++ and/or MPEG-4 at page 140 second column second full paragraph.

Claim 36:

The article describes this claim at page 141 in the paragraph preceding section 3.

Claim 39:

The hybrid ARQ using FEC described at page 141 in section 3.3 teaches this claim.

Claim 40:

The unequal delay-constrained ARQ described at page 141 in section 3.1 teaches this claim. The Lee article does teach the claim limitations of first and second error ARQ allowable error thresholds at section 3.1 since unequal delay is unequal error thresholds.

Claims 43 and 44:

These claims claim the same limitations that claims 23 and 24 claim. These claims are rejected for the same reasons given for claims 23 and 24 above.

5. Claims 20-25, 31-34, 36, 38, and 40-44 are rejected under 35 U.S.C. 102(a) as being anticipated by the IEEE article by Sanghoon Lee, Chris Podilchuk, and Alan C. Bovik et al. titled Foveation-Based Error Resilience for Video Transmission over mobile Networks, 2000, IEEE, vol. 10, pgs.1451-1454. The two inventors of this application are common to the authors of the article, however, since the article has three authors, this article meets the "by others" of 102(a).

Claim 20:

This article describes a method for partitioning a video image between a foveated area and a background area in section 1 at pages 1451. The article describes defining a foveation point in the video image and a foveated area in proximity to said foveation point in the abstract on page 1451. Also described is extracting a first plurality of data signals from said video image representing the foveated area and extracting a second plurality of data signals from said video image representing a background area at page

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1451 second column first full paragraph. Encoding the extracted first plurality of data signals with a first error correction protocol to create a first encoded signal and encoding the extracted second plurality of data signals with a second error correction protocol different from the first error correction protocol to create a second encoded signal is described at page 1451 second column second full paragraph. The Lee article does teach newly added claim limitations of two FEC algorithms, one for the foveated area and one for the non foveated area. See page 1453 first column lines 9-12 and column 2 first full paragraph. Here error resilience corresponds to the claimed FEC algorithm because errors in the bitstream are corrected rather than retransmitted.

Claims 21 and 22:

This article describes eye tracking to determine the foveation point at page 1451 second column first full paragraph.

Claim 23:

This article describes using the average local bandwidths in each macroblock to determine the foveation area and inherently macroblocks having a bandwidth above a threshold is in the foveation layer see page 1451 second column first full paragraph and page 1452 section 2.2 second paragraph.

Claim 24:

This claim is taught by the article on page 1452 section 2.5.



Claim 25:

Lines 1-13 of this claim are the same as lines 1-13 of claim 20, thus, the discussion of claim 20 applies to lines 1-13. Lines 14-19 is met by the packet priority at page 1452 second column line 5 of the second paragraph of section 2.4 and by section 2.4 as a whole along with section 2.3 as well as section 3 since unequal delay allows for unequal error correction.

Claim 31:

This article describes wherein the first plurality of data signals comprises all pixel signals included in a high-resolution area of said video image at page 1451 third full paragraph lines 1-5.

Claim 32:

This article describes wherein the first plurality of data signals comprises all pixel signals included in a high motion area of said video image at page 1451 second column lines 8-11 of the first paragraph of section 2.1. Related objects that the user will gaze to would inherently includes objects of motion since the eye detects motions and focuses on moving objects instinctively.

Claim 33:

The article describes the first error correction protocol comprises at least one of, ARQ (automatic repeat request) algorithms or error resiliency conforming to video communications industry standards H263++ and/or MPEG-4 at page 1453 sections 2.3 and 3.

Claim 34:

The article describes the second error correction protocol comprises at least one error resiliency conforming to video communications industry standards H263++ and/or MPEG-4 at page 1453 sections 2.3 and 3.

Claim 36:

This claim is taught at page 1453 second paragraph of section 3.

Claim 38:

This claim is taught in section 4 at page 1453.

Claim 40:

This claim is taught in section 3 at page 1453. The second Lee article does teach first and second error ARQ allowable error thresholds since in section 3 unequal delay is unequal error thresholds.

Claims 41-44:

These claims claim the same limitations that claims 21 to 24 claim. These claims are rejected for the same reasons given for claims 21 to 24 above.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A. Brier whose telephone number is (703) 305-4723. The examiner can normally be reached on M-F from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713).

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Jeffery A Brier  
Primary Examiner  
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